

HBCSD TECHNOLOGY LESSON PLAN

8th GRADE (Lesson 2)

Grade Level - 8

Lesson Title - Bunco Probability

Standards

[Math Standard - Probability and Statistics](#)

- 1.0 Students know the definition of the notion of independent events and can use the rules for addition, multiplication, and complementation to solve for probabilities of particular events in finite sample spaces.
- 2.0 Students know the definition of conditional probability and use it to solve for probabilities in finite sample spaces.
- 3.0 Students demonstrate an understanding of the notion of discrete random variables by using them to solve for the probabilities of outcomes, such as the probability of the occurrence of five heads in 14 coin tosses.
- 4.0 Students are familiar with the standard distributions (normal, binomial, and exponential) and can use them to solve for events in problems in which the distribution belongs to those families.
- 5.0 Students determine the mean and the standard deviation of a normally distributed random variable.
- 6.0 Students know the definitions of the mean, median, and mode of a distribution of data and can compute each in particular situations.
- 7.0 Students compute the variance and the standard deviation of a distribution of data.
- 8.0 Students organize and describe distributions of data by using a number of different methods, including frequency tables, histograms, standard line and bar graphs, stem-and-leaf displays, scatterplots, and box-and-whisker plots

Technology Competencies

- Computer Identification/Skills 3-6, 8-9
- Application Skills 10-18
- Data Processing 28-30
- Societal/Ethical Issues 48-52

Purpose

Students will use Bunco, a popular dice game, to collect, organize, and represent data. Students will study probability, interpret data, and perform fundamental statistical problem solving. Students will track results in a spreadsheet to analyze data and calculate probability.

Resources

- http://www.ehow.com/how_8139503_bunco-directions-kids.html
- <http://jmathpage.com/JIMSProbabilitypage.html>
- http://www.mathgoodies.com/lessons/vol6/intro_probability.html
- <http://www.learn-with-math-games.com/middle-school-math-games.html>

Supplies

- Sets of 5 dice, one set per 4 students
- Internet accessible computers
- Network printers
- Spreadsheet software like Microsoft Excel
- Paper
- Pencils

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Direct Instruction

1. Review standards for computer use
2. Remind students about computer safety, saving files, and printing procedures
3. Review terms like independent events, conditional probability, standard distributions, mean, median, and mode
4. Instruct students on how to use a spreadsheet program
5. Instruct students on how to play Bunco including the rules

Guided Practice

1. Students practice playing Bunco to get a feel for the game
2. Students manually record results onto paper while practicing
3. Students create a spreadsheet using collected data, saving often into approved medium (network file folder, individual flash drive, etc)
4. Students create different graphs like box and whiskers plot or scatterplot (home/school depending on capability)

Differentiated Instruction

EL - pair with partner, allow additional guidance by either teacher or student mentor
GATE - polling statistics for the school

Assessment

Rubric should be provided prior to guided practice. Teacher can grade based on content accuracy, requirement completion, graphics, and appearance.